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Remarks/arguments:

By the present amendment claims 1, 20, 25, and 26 have been amended. Claims 7, 8, 24, 27, and 29 have been cancelled as unnecessary. Claims 15 and 19 have been cancelled as the subject matter of these claims appear in claim 1 as amended.

In the office action the examiner rejected claims 20-22, and 24-29 under 35 U.S.C. §112. The examiner noted that claim 20 set forth in the preamble "...consisting essentially of the steps of..." whereas claims 24-29 included the specific recitation of the phrase "...further comprising the steps of...". By the present amendment claims 24, 27 and 29 have been cancelled, and claims 25, 26, and 28 have been amended to eliminate the phrase "...further comprising the steps of...". Accordingly the examiner is respectfully requested to withdraw this grounds of rejection.

In addition, after reviewing the MPEP §2111.03, the claims have been amended to eliminate the word "essentially". Thus, it is noted that the patent office may treat the phrase "consisting essentially of" as equivalent to "comprising".

By the present amendment claim 1 and claim 20 have been amended to identify that the prepared base structure may be placed over "a selected one of a tooth stump of a tooth of the dental patient, a peg supported by a jaw of the dental patient, and an attachment element operable to be secured to neighboring tooth structure adjacent to the location at which the dental restoration is to be mounted", rather than just a tooth stump as was previously recited. The new language comes from cancelled claim 27.

In addition the independent claims have been amended to set forth that the interconnecting material is "elastic". As can be seen from page 4, lines 22-26 of the text of this application, by having the interconnecting material elastic, "fatigue breaks in the over structure occur in a significantly less frequent manner, as the pressure peaks, which typically manifest themselves in the tooth protuberance flanks during mastication, are better captured and compensated by the inventive approach." Neither Braiman nor Fisher teach an elastic

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interconnecting material. Accordingly, in view of this amendment, the claims should be allowed.

The claims have also been amended to set forth that the interconnecting material is one layer or a single layer. This feature is not taught by the cited references.

Finally, the independent claims have been amended to eliminate the phrase "time consuming", as no firing is required whether time consuming or otherwise. Braiman requires a firing, and thus the independent claims avoid Braiman for this additional reason.

The examiner rejected all remaining claims as unpatentable over Braiman in view of Fisher et al. It is the examiner's position that it would have been obvious to modify Braiman by using an interconnecting material of the type disclosed in Fisher for the interconnecting material 14 of Braiman. Applicant disagrees with this conclusion, and does not believe that this rejection is proper.

In the last amendment applicant argued as follows:

"Braiman teaches a process for making dental crowns. His claimed invention includes the steps of

"A. molding approximate tooth-shaped unfired thin powder shells representative of various teeth from a hardenable liquid mixture of ceramic powder...

"B.selecting one of the unfired powder shells of approximate predetermined tooth contours having the greatest similarities to the crown desired for a particular patient;

"C.applying a paste buildup of conventional porcelain powders to the selected one of the unfired powder shells to fill same into a more detailed fit molding to a conventional substructure;

"D.purging the selected paste buildup and one powder shell by heating same which purges extraneous material therefrom; [and]

"E.baking the purged selected one buildup and shell under vacuum in a conventional manner to eliminate one member of the group in step A and obtain a solid homogenous ceramic crown; ..."

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"In the Braiman process the shell is fired. This much is clear and applicant's hard over structure may also be hardened by heating. Braiman also discloses the use of a metal understructure 13, to which the shell may be applied as shown in FIG. 3. However, Braiman says very little about how the shell is secured to the metal understructure. In fact, all Braiman says about the securement is as follows:

"In specific embodiments the shells may be attached to a concave metal understructure, which, in turn, is attachable to a prosthesis support in a patient's mouth." [col. 1, lines 55-57]

"FIG. 2 is a cross-sectional view of shell of FIG. 1 after filling with the porcelain powder paste and porcelain beads and exploded therefrom is the metal substructure with the opaque porcelain material applied thereof;" [col. 1, lines 63-66]

"In some instances, particularly in the case of crowns, the blank or powder shell may be originally attached to a metal understructure 13 by the dentine ceramic opaque paste 14 which bonds to the understructure typical to conventional methods." [col 3, lines 48-52]

"Braiman does not suggest that when his over structure is placed over the base structure that it does not need to be fired. In fact, it can be implied that the Braiman process includes the firing of the dentine ceramic opaque paste 14, particularly since: a) such a paste would not bind without firing, and b) "the shell may be originally attached to a metal understructure by the dentine ceramic opaque paste 14 which bonds to the understructure typical to conventional methods." (emphasis added) When one studies this reference, there is simply no suggestion that the bonding of the shell to the metal understructure could take place after the firing of the shell. Thus, the shell is originally attached to the metal understructure, presumably between steps C and D, recited above. In addition, Braiman certainly does not teach that his "dentine ceramic opaque paste 14" is light polymerizable.

"Applicant teaches an interconnecting element which is light curable. The examiner's rejection recognized that Braiman does not teach that the ceramic opaque paste 14 is light hardenable. To overcome this defect he relies upon Fisher who teaches that a dental crown

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can be fabricated using "a light-cured, thin, intermediate layer 21". This thin layer is one component of layers forming the "coupling element" (as referred to by the Examiner) between a core material and the crown. Another layer of silane is required, and it is this layer of silane that Fisher requires.

"Thus, the "coupling element" according to Fisher cannot be compared with the inventive coupling element made of only one (light-polymerizable) material which can be furthermore light-cured in-situ.

"Fisher states:

"According to the invention, a multi-element dental prosthetic device is prepared (for example, a crown) which includes a high-temperature ceramic (preferably aluminum oxide) core, an outer polyceramic jacket, and a plural-layer intermediate layer structure which allows and promotes secure and economically achieved joinder effectively between the core and the jacket. This intermediate layer structure includes a porcelain layer next to the core, a layer of material known in the art as silane next to the porcelain layer, and a layer of a suitable conventional "bonding" material in between the silane layer and the outer jacket."

"Clearly Fisher does not disclose "interconnecting material being light-polymerizable and filling the entire layer defining space between the inner contour of the over structure and the outer contour of the base structure" as required by the claims. Thus Fisher does not make up the defect of the primary reference to Braiman.

"In addition, it would not have been obvious to one having ordinary skill in the art to modify Braiman in the manner suggested by the examiner. More specifically, Braiman actually teaches away from the use of light curable compounds for his interconnecting material 14. Thus, Braiman knew of light curable compounds, as he used them in the shell molding materials, but he never hints at using such a material for the interconnecting material 14. In addition, the material of Fisher is only a thin layer, so thin that it may be applied in layers. However, according to applicant's invention, "the interconnecting material, which is preferably comprised of a hardenable plastic which can be hardened

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in-situ, develops a certain dampening effect so that the wear of the antagonistic teeth is also reduced even in the event that ceramic is deployed for the over structure." The thin layers of Fisher would have no such dampening effect."

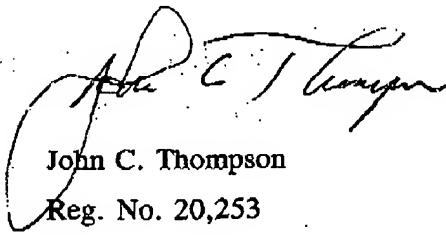
In addition to the above, there is no teaching, suggestion, motivation or other reason to combine the references. The rejection is a classical hindsight rejection which has been improper for many years.

As noted above, the claim element of "elastic" is not found in the references cited and applied by the examiner. As this feature is not found, the claims should be allowed.

Finally, from the previous analysis, it should be apparent that the combination of Fisher with Braiman would defeat the purpose of Braiman.

In that all of the claims of this application are deemed to be in proper form, and furthermore, since the claimed subject matter would not have been obvious from the Braiman and Fisher references for the reasons set forth above, the allowance of this application is respectfully requested in the absence of more relevant prior art.

Respectfully submitted,



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enclosure: petition for one month extension of time